# Rural commuting

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For most people, a commuter is someone who lives in the periphery, travels to work in the urban core, and travels back home at the end of the working day. Research on commuting in Canada's major cities indicates that although commuting remains common, the picture is becoming more complex with increasing periphery-to-periphery flows (Heisz and LaRochelle-Côté 2005).

Various studies have focused on rural commuting, (Schindegger and Krajasits 1997, Green and Meyer 1997, and Mitchell 2005), but, outside major agglomerations, the understanding of the multidirectional nature of commuting patterns is more limited. This article explores the multidirectional nature of commuting patterns in rural areas. It shows that these patterns are more complex than a simple core-periphery approach, typically depicted as a set of circles centred on an urban core, would suggest. A main finding is that, for rural and small town residents, rural-to-rural commuting is as important as rural-to-urban commuting. In other words, rural commuters are as dependent on rural labour markets as on urban labour markets—commuting flows out of communities tend to be multidirectional, not merely periphery-to-core.

This study presents baseline data on the pattern and size of rural commuting flows in 2001 and provides a better understanding of how rural communities are affected by both urban-bound commuters and rural-bound commuters. It also shows that Canada's Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs), which are delineated on the basis of commuting flows, essentially constitute self-contained labour markets. Overall, only 4% of the jobs in these urban areas are occupied by people commuting from rural areas.

The analysis used the 2001 Census of Population and its census subdivisions (CSDs) classified as part of either a larger urban centre (LUC) or a rural and small town (RST) area (see *Data source and definitions*). The methodological challenges caused by the multidirectional nature of commuting flows should be kept in mind. Although the use of different census geographies and different definitions of commuting would, to some extent, modify these results, the existing research on commuting flows within CMAs has also shown the increasing complexity of commuting flows within these urban delineations, as well as the rapid growth of periphery-to-periphery flows. Hence, the overall findings presented in this paper highlight trends that should be considered in future research on rural commuting and rural labour markets.

## Where are the workers and where are the jobs?

In 2001, 2.8 million workers out of 14.7 million resided in rural and small town (RST) areas (Table 1). Of the 2.8 million, about 2.3 million also worked in an RST area, but not necessarily in the municipality where they were living and approximately 0.4 million commuted to a municipality in a larger urban centre (LUC).

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## Data source and definitions

The analysis uses the 2001 **Census of Population** census subdivisions (CSD). Geographic location (coordinates of the geographic centre) and classification of CSDs according to type of area (MIZ code) are from Statistics Canada (2002b). For more details on place of work and place of residence, see Statistics Canada (2002a).

A **commuter** is an individual who reports a place of residence in one CSD and a place of work in a different CSD that is less than 250 km away. Since only one-fifth of households received the longer census form, confidentiality and reliability issues preclude the estimation of commuter flows of less than 20 commuters between any two CSDs (i.e. a sample of less than 4 commuters). The focus is on the nature of labour markets connected by daily commuting. For this reason, the definition of commuter was limited to anyone who worked within 250 km of their place of residence—specifically, only commuting flows between pairs of CSDs whose geographic centres were less than 250 km apart.

This distance threshold excluded only 0.7% of the total flows of commuters available. Individuals living and working in municipalities more than 250 km apart are a marginal group that might include those working at a temporary or seasonal worksite but still reporting their original place of residence or 'fly-in/fly-out' workers (for example, miners or construction workers on a worksite for 7 or 10 days and then home for several days).

The definition of commuting implies the crossing of CSD boundaries when travelling to work. Hence, it does not include those travelling relatively long distances to work within the boundaries of the same CSD. On the other hand, it includes individuals travelling a short distance but crossing a CSD boundary. The goal of this analysis is to account for multidirectional flows (*from-to*), which requires that a continuous space be broken into discrete geographic units, leading to some degree of approximation of real commuting flows.

A **census subdivision** (CSD) is a municipality (i.e. incorporated town, rural municipality, city, etc. determined by provincial legislation) or its equivalent (Indian reserves, Indian settlements, and unorganized territories). The 2001 Census of Population identified 5,600 CSDs (Statistics Canada 2002a). These can vary tremendously in population size—from just a few residents to over 2 million in Toronto. Also, geographic spread can vary widely—from less than 1 square kilometre for a small rural town to large geographic expanses of 'unorganized' territories in northern parts of many provinces. CSD-level data are aggregated into types of areas according to Statistics Canada's Statistical Area Classification.

**Larger urban centres** (LUCs) consist of CSDs classified as part of **census metropolitan areas** (CMAs) and **census agglomerations** (CAs). In 2001, CMAs had an urban core of 100,000 or more and included all neighbouring CSDs where 50% or more of the resident workforce commuted to the urban core. CAs had an urban core of 10,000 to 99,999 and also included neighbouring CSDs where 50% or more of the resident workforce commuted to the core.

- **Larger CMAs** have a total population of 500,000 or more. In 2001, this included Québec, Montréal, Ottawa-Gatineau, Toronto, Hamilton, Winnipeg, Calgary, Edmonton and Vancouver.
- **Smaller CMAs** have a population of 100,000 to 499,999.
- CAs have a population of 10,000 to 99,999.

**Rural and small town** (RST) areas comprise CSDs that are not part of a CMA or CA. RSTs are further classified into a **metropolitan-influence zone** (MIZ):

- **Strong MIZ**: 30% or more of the resident workforce commutes to a CMA or CA;
- **Moderate MIZ**: 5% to 29% of the resident workforce commutes to a CMA or CA;
- **Weak MIZ**: less than 5% of the resident workforce commutes to a CMA or CA; and
- **No MIZ**: none of the workforce commutes to a CMA or CA (or the workforce is less than 40 workers).

The definitions of LUC and RST are based on commuter activity into a CMA or CA. Thus, the amount of commuter activity into a CMA or CA and the type of MIZ to which a CSD is assigned are directly correlated. Similarly, some of the results simply confirm the commuting flows used to generate the classification. On the other hand, the MIZ classification does not assess the flows that occur between different MIZ categories or within the same MIZ category. This is where the analysis is most revealing. In this study, the CMA and CA classifications are based on total population of the agglomeration rather than the population in the urban core. Any agglomeration with total population greater than 100,000 is classified as a CMA; hence, smaller CMAs include 7 CAs with an urban core of less than 100,000 but a total population greater than 100,000. Also, for practical purposes, 16 non-CA CSDs in the territories, with small commuting flows to a CA in the territories, were assigned to the strong MIZ class. However, many of these were excluded because the commuting flow involved less than 20 people or the distance they travelled was 250 km or more.

The geography used has certain implications for the results. Alternative definitions of rural could generate different insights. For instance, an alternative definition is census rural, which refers to the population outside centres of 1,000 or more inhabitants and outside areas with a population density of 400 or more inhabitants per square kilometre (du Plessis et al. 2001). Each CSD may have some census rural areas and some census urban areas. Essentially, this is the countryside within each CSD. In the 1991 to 2006 period, more than one-third of census rural residents lived in a CSD delineated as part of a CMA or CA (Bollman and Clemenson 2008). Thus, census rural and census urban areas would capture multi-directional commuting flows within a CSD (rural-urban, rural-rural, etc.). Specifically, given the definition of rural used, the rural-to-rural commuting in this analysis includes flows between very small municipalities and towns with up to 10,000 inhabitants.

For details on the definitions outlined above see McNiven et al. (2000) and Statistics Canada (2002a).

**Table 1 Workers by place of residence and place of work**

| | Place of work | | |
|---|---|---|---|
| | All areas | Larger urban centres | Rural and small town areas |
| | | '000 | |
| **Place of residence** | | | |
| All areas | 14,695 | 12,197 | 2,498 |
| Larger urban centres | 11,917 | 11,753 | 164 |
| Rural and small town areas | 2,778 | 444 | 2,334 |
| | | % | |
| All areas | 100.0 | 83.0 | 17.0 |
| Larger urban centres | 100.0 | 98.6 | 1.4 |
| Rural and small town areas | 100.0 | 16.0 | 84.0 |
| All areas | 100.0 | 100.0 | 100.0 |
| Larger urban centres | 81.1 | 96.4 | 6.6 |
| Rural and small town areas | 18.9 | 3.6 | 93.4 |

Note: Includes all workers commuting between census subdivisions of the same type as well as those living and working in the same census subdivision.
Source: Statistics Canada, Census of Population, 2001.

**Table 2 Commuters by place of residence and place of work**

| | Place of work | | |
|---|---|---|---|
| | All areas | Larger urban centres | Rural and small town areas |
| | | '000 | |
| **Place of residence** | | | |
| All areas | 4,820 | 4,210 | 611 |
| Larger urban centres | 3,930 | 3,766 | 164 |
| Rural and small town areas | 891 | 444 | 447 |
| | | % | |
| All areas | 100.0 | 87.3 | 12.7 |
| Larger urban centres | 100.0 | 95.8 | 4.2 |
| Rural and small town areas | 100.0 | 49.8 | 50.2 |
| All areas | 100.0 | 100.0 | 100.0 |
| Larger urban centres | 81.5 | 89.5 | 26.8 |
| Rural and small town areas | 18.5 | 10.5 | 73.2 |

Note: Includes those commuting between census subdivisions of the same type.
Source: Statistics Canada, Census of Population, 2001.

Rural and small town workers were not major contributors to jobs in larger urban centres. About 96% of urban jobs were filled by LUC residents, either living in the same municipality or commuting from another LUC. Less than 4% of urban jobs were filled by commuting RST residents. However, because of the difference in the size of the population in LUC and RST areas, the 0.4 million rural commuters represented 16% of all workers residing in RST areas. At the same time, nearly 164,000 commuters were going from an LUC municipality to a municipality in an RST area. These workers represented only a little over 1% of the workers residing in LUCs, but they filled approximately 7% of the jobs in RST areas.

## The big picture: Rural and urban commuters

In 2001, approximately 4.8 million individuals, or one-third of the Canadian workforce, crossed a municipal boundary in their travel to work (Table 2). Most commuted a relatively short distance—only 13% travelled more than 25 km to work, not including those who remained within the same municipality (Statistics Canada 2003).

With over 80% of the Canadian population living in LUCs in 2001 (Bollman and Clemenson 2008), it is not surprising that most of the commuting was concentrated in and around urban centres. About 3.8 million commuters travelled between urban jurisdictions. They represented 78% of all commuters in Canada. The remaining commuters represented all other regional flows (urban-to-rural, rural-to-urban or rural-to-rural).

Only about 164,000 people, or 4% of commuters who resided in an LUC, travelled to a municipality in an RST area for work. This vividly illustrates the extent to which LUCs represent self-contained labour markets.

Among commuters residing in RST areas, slightly over half (447,000) were going to another RST municipality. They, therefore, contributed to the economy of other rural areas. In comparison, approximately 444,000 workers commuted from a rural and small town area to a larger urban area. This suggests that rural-to-rural commuting accounted for a significant proportion of the labour supply in RST areas. These results indicate that when it comes to workers commuting from an RST area, rural jobs are just as important as urban jobs.

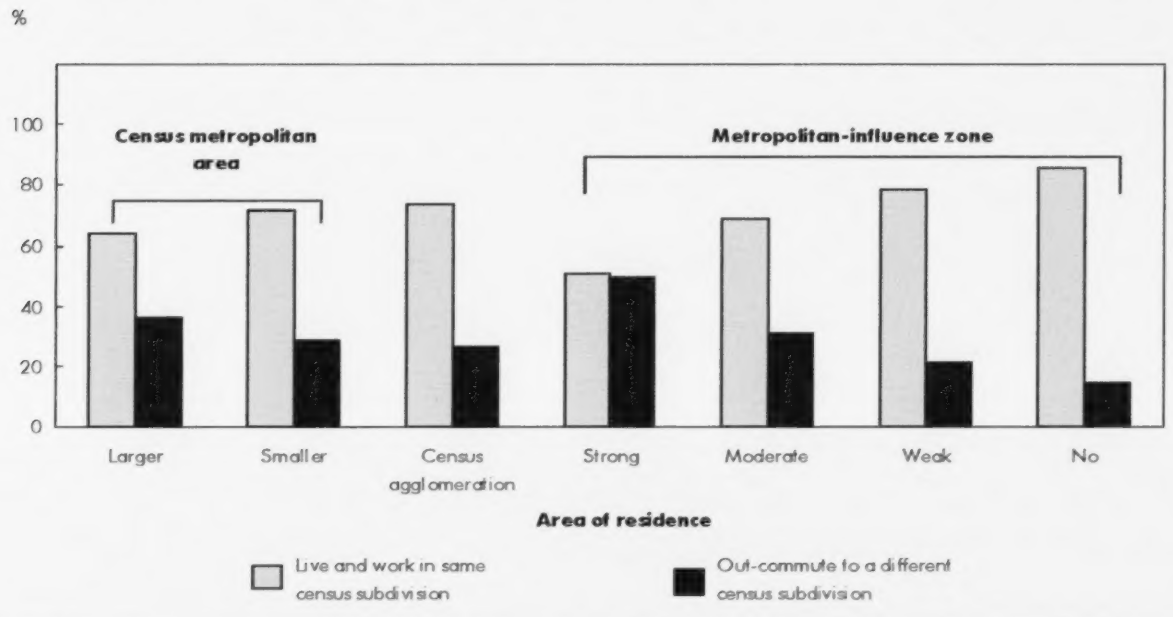
The commuting pattern that emerges from these results also seems to hold for alternative definitions of rural. In particular, research on commuting patterns within CMAs points to the increasing complexity of commuting patterns within metropolitan agglomerations. Between 1996 and 2001, the relative economic importance of inner cities declined as the number of jobs in the suburbs increased at more than four times the pace of those in the core urban areas (Heisz and LaRochelle-Côté 2005). As a result, more and more people commuted across town to these suburban areas. From 1981 to 2001, the number of workers travelling to the suburbs increased 74% to 1.8 million, while those commuting to the city core rose by only 28% to 1.3 million (Statistics Canada 2003). Of those who commuted to surrounding municipalities in 2001, about two-thirds came from another surrounding municipality and one-third from the core urban municipality. The 1.2 million workers commuting from one suburban municipality to another in 2001 represent a 91% increase from 1981 to 2001.

Because most childrearing and housekeeping responsibilities still seem to fall to women, it might be expected that fewer women would commute and that those who did would go smaller distances. In terms of commuting share, for almost all source/destination combinations, women and men differed by only a few percentage points from the overall commuter shares, although women's rates tended to be higher between CSDs in the same type of area. Approximately 400,000 more men than women commuted (2.6 million compared with 2.2 million). However, their overall patterns were similar.

## Looking more closely: Commuting in different parts of rural and urban areas

To probe more deeply into commuting flows by type of area, metropolitan-influence zones (MIZ) were used to differentiate between various RST areas. In addition, cities were divided into larger CMAs, smaller CMAs, and CAs. Overall, the proportion of people

**Chart A Except for strong metropolitan-influence zones, over 60% of workers were employed within their census subdivision of residence**




Source: Statistics Canada, Census of Population, 2001.

commuting was similar for LUCs and RST areas. For each type of region, with the exception of strong MIZs, less than 40% of workers were employed in a CSD other than the one in which they lived (Chart A). Approximately 50% of workers residing in a strong MIZ commuted across a CSD boundary.

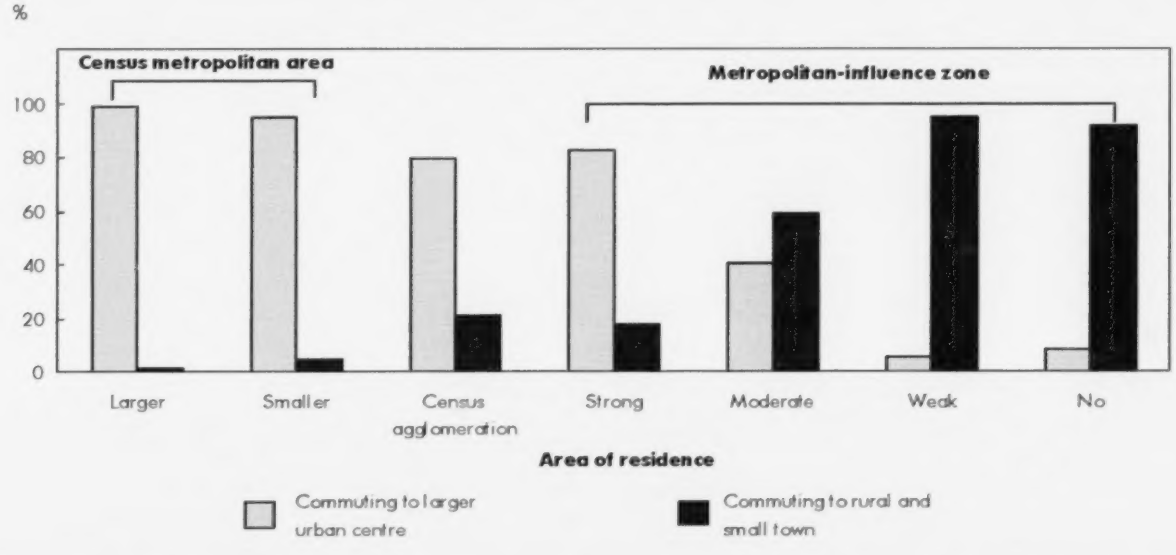
Rural workers commuting into urban areas were more likely to reside in municipalities in strong MIZs. Of the 4,605 municipalities in RST areas, 663 were in a strong MIZ. However, these municipalities accounted for almost 750,000 workers, or 27% of the total RST workforce.

Municipalities within larger CMAs had a higher proportion of commuters than municipalities within smaller CMAs, which in turn had a higher share than CAs. Larger CMAs typically contain many municipalities, relatively few of which have major employment sites. The remaining municipalities are mainly residential areas. RST areas also display a discernable pattern. Going from municipalities in a strong MIZ to those in a no MIZ, relatively fewer workers commute as the strength of the MIZ declines. Again, this points to the 'feeder' role of a strong MIZ, which, in an aggregate regional perspective, appears to reflect the idea of a 'bedroom community' more than any other type of region.

## Out-commuting: Where are rural and urban commuters going?

In both larger and smaller CMAs, the proportion of out-commuters travelling to RST areas was insignificant (Chart B). In addition, the absolute number of commuters was relatively small. However, a much higher proportion (21%) of out-commuters in CAs travelled to a municipality in an RST area. Not surprisingly, municipalities in a strong MIZ were the most common destination for the out-commuters from an LUC area (Chart C). However, moderate MIZs were only a few percentage points behind (and even tied for commuting from larger CMAs).

**Chart B In large urban centres, up to 20% of out-commuters travelled to a rural or small town area compared with about 60% in moderate metropolitan-influence zones**

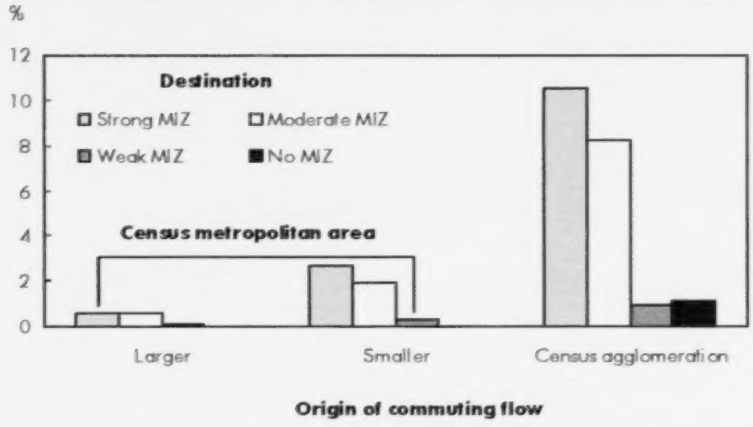



Source: Statistics Canada, Census of Population, 2001.

Among rural and small town areas, strong MIZ municipalities had the most prevalent out-bound commuting relationship with urban areas. More than 80% of out-commuters from a strong MIZ travelled to an LUC municipality. This finding is essentially due to the validity of the MIZ classification, which is based on urban-bound commuting.

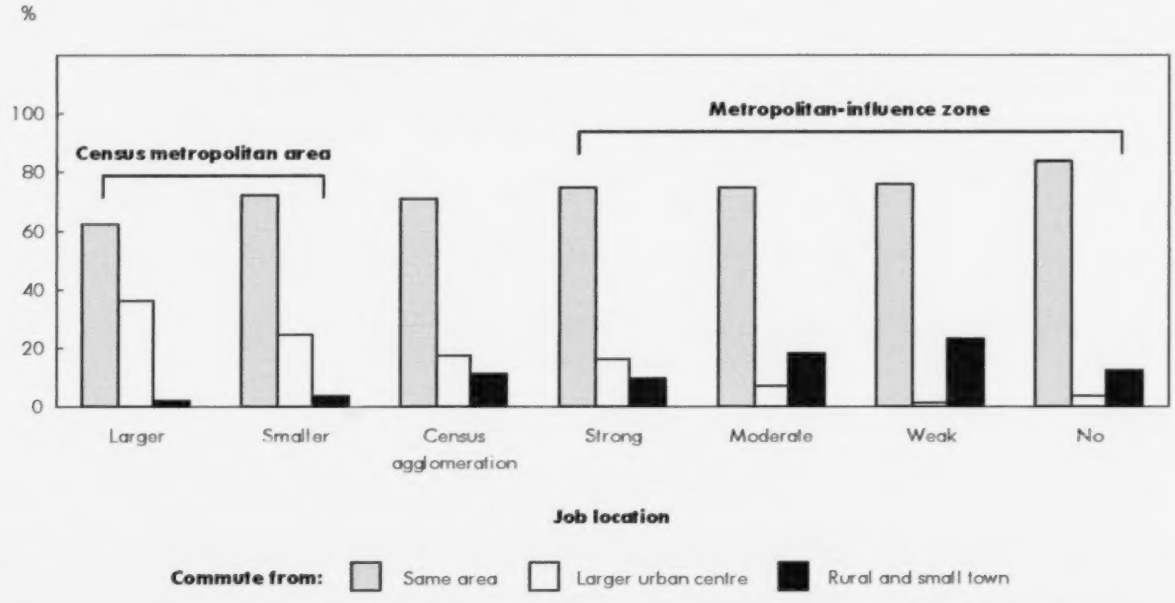
The picture is considerably different beyond strong MIZs. In municipalities in moderate MIZ areas, about 40% of out-commuters travelled to an LUC municipality for work, while 60% travelled to another RST municipality. Less than 10% of weak and no MIZ out-commuters travelled to an LUC municipality for work; the rest, to another RST municipality.

**Chart C For each type of larger urban centre, the share of out-commuters to strong and moderate metropolitan-influence zones (MIZ) was similar**




Source: Statistics Canada, Census of Population, 2001.

**Chart D In rural and small town areas, three-quarters of the jobs in any census subdivision were filled by residents of the same subdivision**




Source: Statistics Canada, Census of Population, 2001.

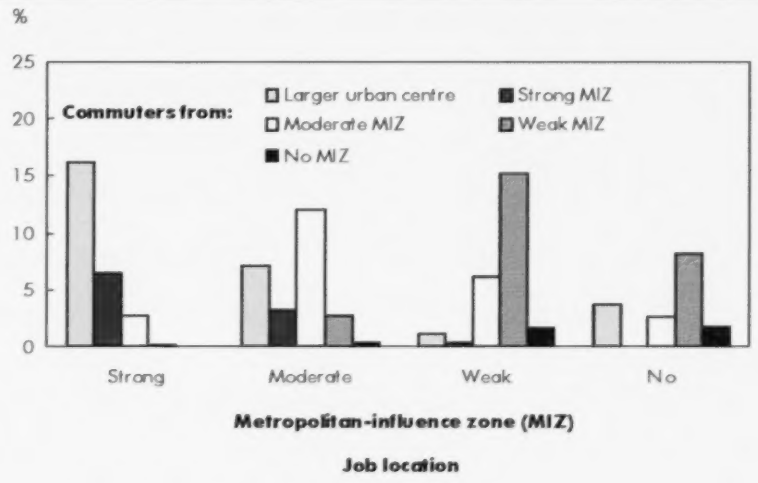
## In-commuting: Who fills rural and urban jobs?

The share of local jobs filled by in-commuting is particularly high for larger CMAs (38%) and smaller CMAs and CAs (almost 30%), while it is close to 25% for strong MIZs, moderate MIZs and weak MIZs (Chart D). It is particularly low for no MIZs (about 16%). However, whether the in-commuters stem mainly from rural or urban areas depends on the type of area. Although some differences existed among LUCs, the share of rural in-commuting was generally low. Municipalities in CAs had a larger portion of jobs filled by in-commuters from RST areas, at about 11%. In contrast, only 4% of jobs in smaller CMAs and less than 2% in larger CMAs were filled by in-commuters from RST areas.

Within RST areas, the share of jobs taken by in-commuters was generally lower than in LUC municipalities. Furthermore, strong MIZs were the only rural and small town areas that had a majority of commuters coming from municipalities in LUCs. About 16% of the jobs in strong MIZ municipalities were filled by commuters from an LUC municipality compared with 9% by commuters from an RST CSD.

For other types of RST areas, the majority of in-commuting emanated from other municipalities within the same area. Once again, this reflects the strong rural-to-rural linkages that tend to be obscured by an analysis of commuting focusing primarily on urban-to-rural flows. Roughly 20% of the jobs in moderate and weak MIZ municipalities were filled by workers from another municipality in an RST area.

**Chart E Over 10% of jobs in moderate metropolitan-influence zones were filled by in-commuters from other moderate metropolitan-influence zones**




Source: Statistics Canada, Census of Population, 2001.

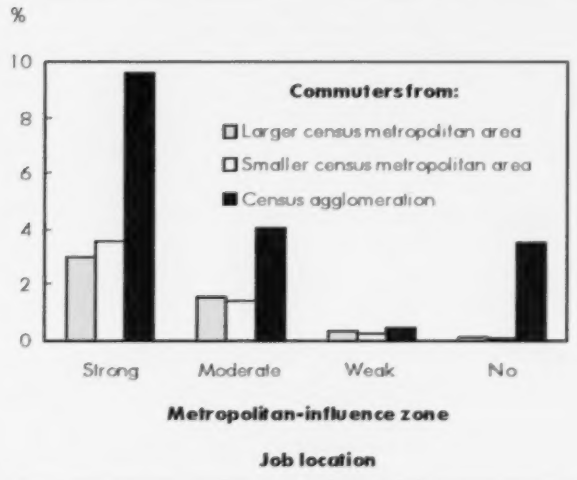
In strong MIZs, more jobs were taken by commuters from LUC municipalities than by commuters from any other type of area. In contrast, in moderate and weak MIZs more jobs were taken by commuters from a municipality of the same MIZ category than from any other type of area. The linkage between strong MIZ municipalities and other MIZ categories (even with other strong MIZ CSDs) was small compared with the linkage to LUC municipalities.

In strong MIZ municipalities, only about 3% of the jobs were filled by commuters from a moderate MIZ; similarly, within moderate MIZ municipalities, only about 3% of the jobs were filled from a strong MIZ (Chart E). Thus, moderate, weak and no MIZ municipalities not only had a low degree of integration with LUC municipalities, they were also relatively less integrated with strong MIZ municipalities.

Census agglomerations are the main departure point of LUC commuters travelling to RST areas (Chart F). With the exception of weak MIZs, a considerably larger proportion of workers in each type of rural and small town area travelled from a CA than from either a smaller or larger CMA. In general, it was the strong MIZ municipalities that were most affected by commuters from an LUC municipality.

More than 16% of the people working in strong MIZ municipalities travelled from an LUC munici-

**Chart F In most types of rural census subdivisions, over half of the commuters from a larger urban centre were from a census agglomeration**




Source: Statistics Canada, Census of Population, 2001.

pality—with well over half of them in-commuting from a CA. The equivalent proportion for moderate MIZs, the next closest regional type, was approximately 7%. (However, since MIZ classification is based on the size of commuting to any CMA or CA, such reverse commuting from a CMA or CA to strong MIZ municipalities may be expected.)

## Conclusion

Commuting is, to a large extent, an urban phenomenon. Given the existing distribution of population and jobs, it is not surprising that close to 80% of commuting takes place between municipalities within larger urban centres. The existing research on commuting within CMAs indicates that, even in these areas, commuting patterns are becoming increasingly complex with growing core-to-periphery and periphery-to-periphery flows.

Rural commuting is also more complex than commonly believed. Any analysis of commuting that concentrates on the flows from the (rural) periphery to the (urban) core overlooks half of rural commuting, which is rural-to-rural. For commuters residing in rural and small town areas, rural-to-rural commuting is as large as rural-to-urban commuting. Moreover, rural jobs are more than twice as reliant on in-commuters from other rural areas as they are on in-commuters from urban areas. Rural-to-rural linkages appear particularly strong in RST areas beyond strong MIZs. Overlooking these rural-to-rural commuting flows limits understanding of the economic linkages between rural communities and the degree of integration in rural labour markets.

CMAs and CAs seem to successfully delineate self-contained labour markets. Only 4% of jobs in larger urban centres are filled by commuters from RST areas (these workers represent 16% of workers residing in RST areas). As well, RST areas classified as strong MIZs accurately constitute the dividing belt between LUCs and RST areas. The pattern of rural-to-rural commuting has been labelled the 'arena society' to emphasize that different functions—residence, recreation and work—are increasingly disjointed over space and may each involve a commute in a different direction (Persson et al. 1997).

At the regional level, the analysis of commuting flows is a pre-condition for the identification of functional areas that present strong economic linkages and share a common pool of labour. These areas form an important territorial unit of analysis as well as a focus for the delivery of policy. The research challenge is to provide a better delineation of rural labour markets that can complement the information captured by the prevailing MIZ classification. Clearly some rural areas are strongly connected to urban labour markets, but most of the rural communities and half of the rural commuters are dependent on other rural labour markets.

Perspectives

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